IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims:

1-24. (Canceled)

25. (Currently Amended) A signal processing apparatus comprising:

a signal acquiring unit configured to acquire second signals of a second dimension by projecting first signals as real-world signals of a first dimension on a sensor and by detecting the mapped signals by said sensor, said second dimension being lower than said first dimension; and

a signal processor configured to extract significant information, buried by said projection from said second signals, by performing signal processing which is based on said second signals, and adjust distortion produced by projection according to the significant ~~information.~~information,

wherein a projecting period for acquiring the second signal is divided into at least two equal time periods according to a number of movement quantities upon acquiring the second signal, signals obtained in each of the equal time periods being used to generate the significant information.

26. (Canceled)

27. (Previously Presented) The signal processing apparatus according to claim 25 wherein said sensor is made up of a plurality of detection elements having time integrating effects;

said signal acquiring unit acquiring a plurality of detection signals for said respective detection elements, as detected by said sensor, as said second signals;

said distortion being the distortion caused by the time integrating effect.

28. (Previously Presented) The signal processing apparatus according to claim 27 wherein said signal acquiring unit acquires said detection signals of a plurality of time units, as detected by plural detection elements of said sensor every predetermined time unit;

said signal processor extracts said significant information for said second signal of a desired time based on plural detection signals of said plural time units.

29. (Original) The signal processing apparatus according to claim 25 wherein said second signals are picture signals.

30. (Previously Presented) The signal processing apparatus according to claim 25 wherein said signal processor includes an area specifying unit configured to specify a significant area and the other areas in said second signal, said significant area containing the significant information buried by said projection, outputting the area information specifying the specified area as said significant information.

31. (Original) The signal processing apparatus according to claim 30 wherein said area information specifies the foreground area, as said other area, made up only of foreground object components constituting a foreground object, the background area made up only of background object components constituting a background object, as said other area, and the mixed area mixed from said foreground object components and the background object components.

32. (Original) The signal processing apparatus according to claim 31 wherein said area information contains the information for discriminating said mixed area into a covered background area and an uncovered background area.

33. (Previously Presented) The signal processing apparatus according to claim 30 wherein said signal processor further includes a significant information extracting unit configured to extract said significant information from an area containing said significant information specified by said area specifying unit.

34. (Original) The signal processing apparatus according to claim 33 wherein said significant information specifies a mixing ratio of said foreground components and the background components in said mixed area of said second signal made up of a foreground area comprised only of foreground object components constituting the foreground objects, a background area comprised only of background object components constituting the background objects and a mixed area mixed from said foreground object components and said background object components.

35. (Previously Presented) The signal processing apparatus according to claim 33 wherein said signal processor further includes a distortion adjustment unit configured to adjust the amount of distortion produced in said second signal by said projection based on said significant information.

36. (Previously Presented) The signal processing apparatus according to claim 35 wherein said distortion adjustment unit reduces the amount of said distortion.

37. (Previously Presented) The signal processing apparatus according to claim 35 wherein said distortion adjustment unit eliminates said distortion.

38. (Original) The signal processing apparatus according to claim 35 wherein said distortion is movement blurring produced in said foreground object.

39. (Previously Presented) The signal processing apparatus according to claim 38 wherein said signal processor further includes an object movement detection unit configured to detect the movement quantity of said foreground object; and

wherein said distortion adjustment unit adjusts the quantity of movement blurring which is said distortion based on said movement quantity of said foreground object.

40. (Previously Presented) The signal processing apparatus according to claim 25 wherein said signal processor extracts, as said significant information, a mixing ratio of

foreground object components and the background object components in said mixed area of said second signal made up of a foreground area comprised only of foreground object components constituting the foreground object, a background area comprised only of background object components constituting the background object and a mixed area mixed from said foreground object components and said background object components.

41. (Previously Presented) The signal processing apparatus according to claim 40 wherein said signal processor further includes a distortion adjustment unit configured to adjust the amount of distortion produced in said second signal by said projection based on said significant information.

42. (Previously Presented) The signal processing apparatus according to claim 41 wherein said distortion adjustment unit reduces the amount of said distortion.

43. (Previously Presented) The signal processing apparatus according to claim 41 wherein said distortion adjustment unit eliminates said distortion.

44. (Original) The signal processing apparatus according to claim 41 wherein said distortion is movement blurring produced in said foreground object.

45. (Previously Presented) The signal processing apparatus according to claim 44

wherein said signal processor further includes an object movement detection configured to detect the movement quantity of said foreground object; and

wherein said distortion adjustment means adjusts the quantity of movement blurring which is said distortion based on said movement quantity of said foreground object.

46-50. (Canceled)

51. (Currently Amended) A signal processing method comprising:

a signal acquisition step of acquiring a second signal by projecting a first signal as a real world signal of a first dimension on a sensor and detecting the so-mapped first signal by said sensor, said second signal being of a second dimension lower than said first dimension;

a signal processing step of performing signal processing based on said second signal to extract significant information buried by projection from said second signal; and

adjusting distortion produced by projection according to the significant ~~information.~~information,

wherein a projecting period for acquiring the second signal is divided into at least two equal time periods according to a number of movement quantities upon acquiring the second signal, signals obtained in each of the equal time periods being used to generate the significant information.

52. (Currently Amended) A recording medium having recorded thereon a computer-readable program, said program comprising:

a signal acquisition step of acquiring a second signal by projecting a first signal as a real world signal of a first dimension on a sensor and detecting the so-mapped first signal by said sensor, said second signal being of a second dimension lower than said first dimension;

a signal processing step of performing signal processing based on said second signal to extract significant information buried by projection from said second signal; and

adjusting distortion produced by projection according to the significant ~~information.~~information,

wherein a projecting period for acquiring the second signal is divided into at least two equal time periods according to a number of movement quantities upon acquiring the second signal, signals obtained in each of the equal time periods being used to generate the significant information.

53. (Currently Amended) A signal processing apparatus comprising:

a signal acquisition unit configured to acquire a second signal by detecting a first signal as a real world signal of a first dimension by a sensor, said second signal being of a second dimension lower than said first dimension and containing distortion caused by integrating effects of said sensor with respect to said first signal; and

a signal processor configured to extract significant information, buried by projection from said second signal, by performing signal processing on said second signal, and to generate a third signal alleviated in distortion as compared to said second signal according to the significant ~~information.~~information,

wherein a detecting period for acquiring the second signal is divided into at least two equal time periods according to a number of movement quantities upon detecting the second signal, signals obtained in each of the equal time periods being used to generate the significant information.

54. (Previously Presented) The signal processing apparatus according to claim 53 wherein said sensor is made up of a plurality of detection elements having time integrating effects as said distortion;

said signal acquisition unit acquiring a plurality of detection signals detected by said sensor for said respective detection elements as said second signals;

said signal processor performing signal processing on said second signal to generate said third signal, made up of a plurality of sample data corresponding to said detection signals, alleviated in time integrating effects.

55. (Previously Presented) The signal processing apparatus according to claim 54 wherein if a first object in the real world and a second object performing relative movement with respect to the first object are detected by said sensor, said signal processor alleviates, by said signal processing, the distortion caused by the mixing of said first object and the second object due to time integrating effects of said sensor in the vicinity of a boundary between said first and second objects.

56. (Previously Presented) The signal processing apparatus according to claim 55 wherein said signal acquisition unit acquires said detection signals of a plurality of time units, as detected by plural detection elements of said sensor every predetermined time unit;

said signal processor alleviating, by said signal processing, the distortion caused in the vicinity of the boundary between said first and second objects represented by said second signal corresponding to a desired time unit based on said detection signal of plural time units.

57. (Previously Presented) The signal processing apparatus according to claim 54 wherein if a first object in the real world and a second object performing relative movement with respect to the first object are detected by said sensor, said signal processor separates one of said first and second objects, from said first and second objects mixed in said second signal, to output the separated one of said first and second objects as said third signal.

58. (Original) The signal processing apparatus according to claim 53 wherein said sensor converts electromagnetic waves, inclusive of light, as said first signal, into picture signals, as said second signal, by photoelectric conversion.

59-69. (Canceled)

70. (Currently Amended) A signal processing apparatus for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing apparatus comprising:

an area specifying unit configured to specify a foreground area made up only of foreground object components constituting an foreground object, a background area made up only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components;

a mixing ratio detector configured to detect a mixing ratio of said foreground object components and said background object components at least in said mixed area; and

a separating unit configured to separate said mixed area in units of a pixel into said foreground object component and said background object component based on the specified results by said area specifying unit and said mixing ~~ratio.~~ratio,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

71. (Previously Presented) The signal processing apparatus according to claim 70 further comprising:

a movement blurring quantity adjustment unit configured to adjust the movement blurring quantity of said foreground object.

72. (Currently Amended) A signal processing method for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing method comprising:

an area specifying step of specifying a foreground area, made up only of foreground object components constituting an foreground object, a background area made up only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components;

a mixed area detection step of detecting a mixing ratio of said foreground object components and said background object components at least in said mixed area; and

a separating step of separating said mixed area into said foreground object and said background object based on the specified results by said area specifying step and said mixing ~~ratio.~~ratio.

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

73. (Currently Amended) A recording medium having a computer-readable program, recorded thereon, said computer-readable program comprising:

an area specifying step of specifying a foreground area, made up only of foreground object components constituting an foreground object, a background area made up

only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components;

a mixed area detection step of detecting a mixing ratio of said foreground object components and said background object components at least in said mixed area; and

a separating step of separating said mixed area into said foreground object and said background object based on the specified results by said area specifying unit and said mixing ~~ratio.~~ratio,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

74. (Currently Amended) A signal processing apparatus for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing apparatus comprising:

an area specifying unit configured to specify a foreground area, made up only of foreground object components constituting an foreground object, a background area made up only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components;

a mixing ratio detecting unit configured to detect a mixing ratio between said foreground object components and said background object components at least in said mixed

area based on the results specified by said area specifying unit and areas before and after said mixed ~~area.~~area,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

75. (Previously Presented) The signal processing apparatus according to claim 74 further comprising:

a separating unit configured to separate said foreground object and said background object from each other based on said mixing ratio.

76. (Previously Presented) The signal processing apparatus according to claim 74 further comprising:

a movement blurring quantity adjustment unit configured to adjust the quantity of movement blurring contained in said foreground object.

77. (Previously Presented) The signal processing apparatus according to claim 76 further comprising:

a movement detection unit configured to detect the movement of at least one of said foreground object and said background object;

said movement blurring adjustment unit adjusting the movement blurring quantity based on the detected movement.

78. (Currently Amended) A signal processing method for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing method comprising:

an area specifying step of specifying a foreground area, made up only of foreground object components constituting an foreground object, a background area made up only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components; and

a mixing ratio detecting step of detecting a mixing ratio between said foreground object components and said background object components at least in said mixed area based on the results specified by said area specifying ~~step.~~step,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

79. (Currently Amended) A recording medium having a computer-readable program recorded thereon, said signal processing method for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said computer-readable program comprising:

an area specifying step of specifying a foreground area, made up only of foreground object components constituting an foreground object, a background area made up

only of background object components constituting a background object, and a mixed area mixed from said foreground object components and the background object components; and

a mixing ratio detecting step of detecting a mixing ratio between said foreground object components and said background object components at least in said mixed area based on the results specified by said area specifying ~~step.~~step,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

80. (Currently Amended) A signal processing apparatus for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing apparatus comprising:

a mixing ratio detecting unit configured to detect a mixing ratio of foreground object components and background object components in a mixed area in which said foreground object components constituting a foreground object and said background object components constituting a background object are mixed; and

a separating unit configured to separate said mixed area into said foreground object and said background object based on said mixing ~~ratio.~~ratio,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement

quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

81. (Previously Presented) The signal processing apparatus according to claim 80 further comprising:

a movement blurring quantity adjustment unit configured to adjust the movement blurring quantity of said foreground object.

82. (Previously Presented) The signal processing apparatus according to claim 81 further comprising:

a movement detection unit configured to detect the movement of at least one of said foreground object and said background object;

said movement blurring adjustment unit adjusting the movement blurring quantity based on the detected movement.

83. (Currently Amended) A signal processing method for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said signal processing method comprising:

a mixing ratio detecting step of detecting a nixing ratio of foreground object components and background object components in a mixed area in which said foreground object components constituting a foreground object and said background object components constituting a background object are mixed; and

a separating step of separating said mixed area into said foreground object and said background object based on said mixing ~~ratio.~~ratio,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.

84. (Currently Amended) A recording medium having recorded thereon a computer-readable program for processing a predetermined number of detection signals acquired by a sensor made up of a predetermined number of detection elements having time integrating effects, said computer-readable program comprising:

a mixing ratio detecting step of detecting a mixing ratio of foreground object components and background object components in a mixed area in which said foreground object components constituting a foreground object and said background object components constituting a background object are mixed; and

a separating step of separating said mixed area into said foreground object and said background object based on said mixing ~~ratio.~~ratio,

wherein a detecting period for acquiring the predetermined number of detection signals is divided into at least two equal time periods according to a number of movement quantities upon acquiring the predetermined number of detection signals, signals obtained in each of the equal time periods being used to generate the mixing ratio.